

PATENT SPECIFICATION

329,825

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PROVISIONAL SPECIFICATION.

Improvements in Jockey Pulley Apparatus.

I, EDWARD VICTOR HAMMOND, of 88, Louisville Road, Balham, in the County of London, Mechanical, Electrical and Automobile Engineer, British national, do hereby declare the nature of this invention to be as follows:—

This invention relates to improvements in jockey pulley apparatus. The improvements consist of simplifying the design, cheapening the cost of manufacture (by reducing the number of component parts) and also simplifying the manipulation of said jockey pulley gear when in actual use.

According to this invention, I provide a rocking lever, said rocking lever carried upon a pin, which pin is situated nearer to one extremity of the lever than to the other extremity in order to provide the requisite leverage. At the extremity of the short arm of the lever is carried a jockey pulley, whilst the extremity of the long arm of the lever is coupled to a tension rod. This tension rod, which can be of any length, and is preferably rendered adjustable by means of a turnbuckle, is coupled to a hand lever, said hand lever carried at any convenient point on the machine or apparatus upon which the jockey pulley gear is employed.

The hand lever is preferably of the "bell-crank" variety and the tension rod is coupled to the short arm.

In applying the hand lever (in order to start a machine or apparatus) the short arm of the bell-crank, in applying tension to the tension rod aforesaid, swings through an arc or sector of a circle. In swinging through this arc, the short arm of the bell-crank is brought past the "dead centre", in which position the long arm or handle portion of the bell-crank lever comes to rest against a "stop". By reason of the tension already placed on the tension rod (due to tightening up the driving belt) the tension in said tension rod holds the bell-crank lever in position against the "stop" and no locking apparatus is required. The bell-crank lever cannot, of its own volition, move back past the "dead centre" hence it remains in the "on" or driving position until the handle portion of said bell-crank lever is released by the operator in charge of the machine or apparatus.

Dated the 10th day of May, 1929.

EDWARD VICTOR HAMMOND.

COMPLETE SPECIFICATION.

Improvements in Jockey Pulley Apparatus.

I, EDWARD VICTOR HAMMOND, of 88, Louisville Road, Balham, in the County of London, Mechanical, Electrical and Automobile Engineer, British national, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to improvements in jockey pulley apparatus.

The jockey pulley apparatus described herein is applicable to motor vehicles, particularly where such motor vehicles are of small size and low horse power, and where cheapness of construction is of primary

[Price 1/-]

importance, since this jockey pulley gear forms a clutch in addition to a belt drive. It is also applicable to a variety of general machinery, machine tools and other apparatus.

In one form of device of this type hitherto proposed, an adjustable coupling rod has been connected to a bell crank lever (carrying the jockey pulley) at one end, and to a crankpin at the other extremity, said crankpin being carried on a crank disc, a projection on the periphery of said disc coming to rest against a stop when the rod has moved past the dead centre position. In another form, a swinging link carrying the jockey pulley

is operated by an arrangement of toggles in such a manner that said toggles, in operating the swinging link, become locked over a dead centre.

5 In the accompanying drawings, Fig. 1, represents a side elevation of the jockey pulley gear, whilst Fig. 2 represents the side elevation of an alternative method of applying the apparatus. In Fig. 1 a
10 rocking lever is represented at (a), said lever rocking or oscillating about a pin (b), which pin (b) is carried at any convenient point on any motor vehicle, machine or apparatus or may be carried
15 in a bracket affixed to such motor vehicle, machine or apparatus as shown at (c) in Fig. 1.

The pin (b) acts as a fulcrum for the rocking lever, which fulcrum is preferably situated nearer to the jockey pulley (d) than to the other extremity of the lever, thus providing a desirable leverage. The pulley (e) may be either the driving or driven pulley of the automobile,
25 machine or apparatus on which this jockey pulley gear is used. A "belt" or driving band is shown at (f), Fig. 1.

At the short end of the rocking lever (a) is attached the jockey pulley (d) (which
30 jockey pulley is preferably carried on ball or roller bearings), whilst to the extremity of the long end of the lever is attached the coupling rod (g). The coupling rod (g) is preferably connected to the
35 rocking lever by the forked joint (h) although any other suitable connection may be used. The coupling rod (g), which may be of any suitable length, is preferably fitted with a turnbuckle (i)
40 which turnbuckle serves to adjust the jockey pulley for requisite tension—a very necessary feature.

The extremity of the coupling rod (g) furthest from the rocking lever is coupled
45 to a hand lever (j). The hand lever (j) may conveniently be shaped in the form of a "bell crank" lever as shown in Fig. 1, but any other shape or configuration of lever may be used that will fulfil the
50 function to be presently described.

To the extremity of the short arm of the bell crank lever is attached the coupling rod (g). When, in order to start a
55 machine or apparatus, an operator moves the hand lever (j), the said hand lever, in swinging about its fulcrum pin (k) will, at its short end, move through an arc or sector of a circle as shown by the chain dotted line (l). In Fig. 1 the hand
60 lever (j) is shown in the "on" or driving position, in which position the jockey pulley (d) tightens the belt (f) and so transmits the power. When the hand lever is moved to the "off" position, the
65 joint (m) to which the coupling rod is

attached, will move to the point (m₁).

When the hand lever (j) is in the "off" position, the operator of the machine, in swinging said hand lever to the "on" position (as shown in Fig. 1) will bring
70 the joint (m) past the "dead centre" indicated by the dot (n). Now in moving the point (m₁) to the point (m), tension is applied to the coupling rod (g) by the act of tightening the driving belt (f).
75 When, in applying the hand lever (j), the operator brings the point (m₁) beyond the "dead centre" (n), the tension already existing in the rod (g) will effectually prevent the point (m) from returning past the dead centre (n). The hand lever (j),
80 at a convenient point shortly beyond the dead centre, is brought to rest against a "stop" as shown at (o) in Fig. 1.

Now it will be obvious that until such
85 time as the hand lever (j) is released by the operator of the machine, the tension existing in the rod (g), due to the pull exerted by the tension existing in the belt (f), will cause the point (m) to remain in the "on" or driving position,
90 since it is impossible for the point (m) to move back past the dead centre (n) of its own volition. It will be observed that this arrangement is both simple and effective in action and obviates the necessity
95 for providing any form of locking device for the bell crank lever (j) thus cheapening and simplifying the apparatus. At the same time, due to the absence of a locking
100 arrangement, the hand lever (j) can be thrown into the "off" or "on" position with great rapidity which is a desirable feature where the machine or apparatus to
105 which this jockey pulley gear is affixed, is being worked by an operator employed at "piece work" rates.

The circular knob (p) Fig. 1 is provided as a hand grip for the operator.

An alternative arrangement of the
110 jockey pulley gear dealt with in this specification is illustrated in Fig. 2 of the accompanying drawings. In this arrangement the coupling rod (g₁) and the rocking lever (a₁) Fig. 2, operate substantially
115 the same as the device shown in Fig. 1, and as described in connection therewith. In the arrangement of the device as shown in Fig. 2, the jockey pulley (e₁) is mounted
120 on a swinging link or links (q) Fig. 2, said link or links being pivoted on the pin (b₁), said pin being carried in the bracket (c₁), or at any convenient point on the machine or apparatus on which this jockey pulley
125 gear is used. To the extremity of the short end of the rocking lever (a₁) is coupled a connecting rod, or rods (r), one end of said rod, or rods being coupled to a convenient point on the swinging link or links (q), whilst the remaining end is
130

jointed to the lever (a_1), preferably at the point (s). A convenient and inexpensive method of making this joint is by inserting a piece of tubing (t) through a bored hole formed in the boss (s) on the lever (a_1).

The piece of tubing is drilled through to receive the rod, or rods (r). The rod (r) is threaded for a convenient length with a screw thread and lock nuts secure said rod (r) on both sides of the tube (t). The tube (t) is free to oscillate on the boss (s).

It will be observed that, in addition to the adjustment that can be made at the turnbuckle (z) Fig. 1, an additional adjustment can now be made at the rod or rods (r).

In Fig. 2 the jockey pulley (e_1) is shown operating against the outer side of the belt (f_1) but said jockey pulley (e_1) may be placed in any other convenient position relative to the belt, provided the position is such that the rods r and g are in tension when the belt is tight.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—

1. In a jockey pulley gear, a rocking lever carrying a jockey pulley, said rocking lever operated by a coupling rod, a hand lever operating said coupling rod, said hand lever characterised in that the point at which the coupling rod is anchored to said hand lever is brought past the "dead centre" whereby the tension in said coupling rod holds the hand lever against a "stop", thereby holding the jockey pulley in the "on" or driving position, without employing any locking device, substantially as described in the specification, with reference to the accompanying drawings.

2. In a jockey pulley gear as claimed in Claim 1, the combination of a hand lever

with a coupling rod (said coupling rod being preferably adjustable) and a rocking lever carrying a jockey pulley, substantially as described in the specification, with reference to the accompanying drawings.

3. In a jockey pulley gear as claimed in Claim 1 or Claim 2, a connecting rod or rods (such as (r), Fig. 2) coupling the rocking lever (such as (a_1), Fig. 2) to a swinging link, said swinging link carrying a jockey pulley, substantially as described in the specification with reference to the attached drawings.

4. A jockey pulley gear comprising in combination a rocking lever (such as (a_1), Fig. 2) coupled to a connecting rod or rods (such as (r), Fig. 2), said connecting rod or rods connecting the rocking lever to a swinging link carrying a jockey pulley, said rocking lever operated by a coupling rod (adjustable or otherwise), said coupling rod anchored to a hand lever, said hand lever characterised in that the point at which the coupling rod is anchored to said hand lever is brought past the "dead centre" whereby the tension in said coupling rod holds the hand lever against a "stop", thereby holding the jockey pulley in the "on" or driving position without employing any locking device, substantially as described in the specification, with reference to the attached drawings.

5. In a jockey pulley gear as claimed in Claim 3, the connecting rod or rods screwed or threaded for a suitable length and adjusted by lock nuts, substantially as described in the specification with reference to the attached drawings.

6. A jockey pulley operating and locking arrangement constructed and arranged substantially as described in the accompanying specification with reference to the accompanying drawings.

Dated the 27th day of January, 1930.
EDWARD VICTOR HAMMOND.

**POOR
QUALITY**

[This Drawing is a reproduction of the Original on a reduced scale.]

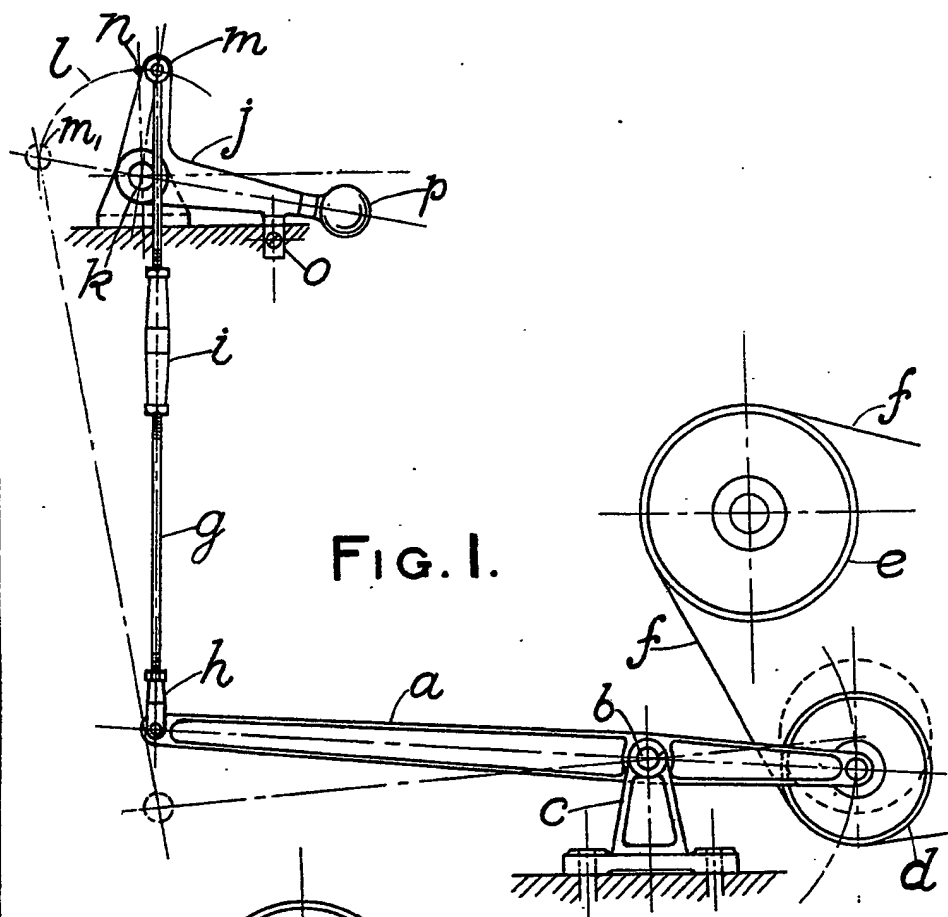


FIG. 1.

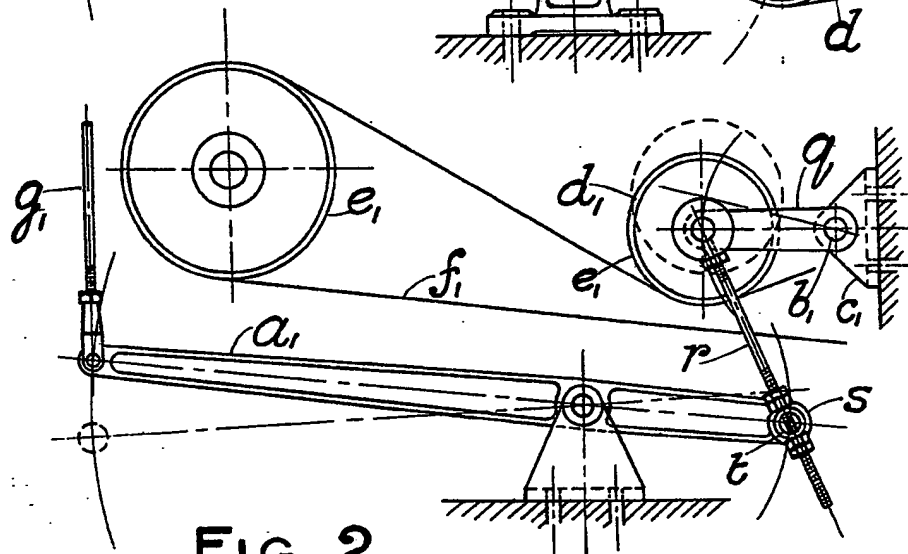


FIG. 2.

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